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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/659,240 | 09/09/2003 | Gerald H. Negley | 5308-310 | 3504 |

7590 03/24/2005
Mitchell S. Bigel
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Raleigh, NC 27627

EXAMINER

NGUYEN, DAO H

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2818

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,240

Applicant(s)

NEGLEY, GERALD H.

Examiner

Dao H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 23-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1103 - 0105</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In response to the communications dated 09/09/2003 through 01/14/2005, claims 1-26 are active in this application.

Acknowledges

2. Receipt is acknowledged of the following items from the Applicant.

Information Disclosure Statements (IDS) filed on 11/14/2003, 02/26/2004, 10/15/2004, 01/13/2005, and 01/14/2005. The references cited on the PTOL 1449 form have been considered.

Applicant is requested to cite any relevant prior art if being aware on form PTO-1449 in accordance with the guidelines set for in M.P.E.P. 609.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I: Claims 1-22, drawn to transmissive optical elements and method of forming the same, classified in class 438, subclass 29.

Group II: Claims 23-26, drawn to light emitting device, classified in class 257, and subclass 79.

4. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of following can be shown: (1) that the process as claimed can be use to make other and materially different product or by hand, or (2) that the product as claimed can be made by another and materially different process.

(MPEP § 806.05(f)). In the instant case, unpatentability of the group II invention would not necessarily imply unpatentability of the group I invention, since the device of the group II invention could be made by other and materially different processes from those of the group I invention, for example, the device of group II can be formed by molding a transparent plastic resin composition containing phosphor dispersed therein into a dome-shaped shell, instead of by filling a dome-shaped mold with a molten liquid comprising transparent plastic and phosphor dispersed therein, and then solidifying the liquid to form the transmissive element as stated in group II invention.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, the fields of search are not co-extensive. Therefore, separate examination would be required and restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Attorney Mitchell S. Bigel on 03/16/05, a provisional election was made with traverse to prosecute the invention of Group I,

claims 1-22. Affirmation of this election of claims must be made by applicant in replying to this Office action.

Claims 23-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently filed petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(h).

Specification

8. The specification has been checked to the extent necessary to determine the presence of possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claim(s) 1-3 and 6-8 are rejected under 35 U. S. C. § 102 (e) as being

anticipated by U.S. Patent No. 6,734,465 to Taskar et al.

Regarding claim 1, Taskar discloses a method for forming a transmissive optical element, as shown in figs. 1-9, comprising:

filling a mold 14 with a molten liquid (composite gel or liquid) that comprises a transparent plastic (the shell could compose of, but not limited to, acrylate, epoxy, silicon and silicon-epoxy hybrid (col. 9, lines 25-32; see also U.S. Patent No. 6,576,930 to Reeh et al., col. 6, lines 22-31), and a phosphor additive; and

allowing the molten liquid to solidify to produce the transmissive optical element having phosphor dispersed therein (col. 7, lines 46-51). See also col. 3, line 32 to col. 10, line 61.

Regarding claim 2, Taskar discloses the method wherein the transmissive optical element is a dome through which a light emitting device 11 emits light and wherein the filling comprises filling a dome-shaped mold with a molten liquid that comprises a transparent plastic and a phosphor additive. See figs. 2-4 and col. 5, line 59 to col. 6, line 61; col. 7, line 45 to col. 10, line 67.

Regarding claim 3, Taskar discloses the method further comprising forming a transparent core 13 inside the dome 14. See figs. 2-4.

Regarding claim 6, Taskar discloses the method wherein the filling is preceded by forming a transparent core and wherein the filling comprises filling a dome-shaped mold that includes the transparent core with a molten liquid that comprises a transparent plastic and a phosphor additive. See figs. 2-4 and col. 5, line 59 to col. 6, line 61; col. 7, line 45 to col. 10, line 67.

Regarding claim 7, Taskar discloses the method wherein the transmissive optical element is a keypad key through which a light emitting device emits light and wherein the filling comprises filling a keypad key-shaped mold with a molten liquid that comprises a transparent plastic and a phosphor additive. See figs. 5, 9 and col. 5, line 59 to col. 6, line 61; col. 7, line 45 to col. 10, line 67.

Regarding claim 8, Taskar discloses the method wherein the transmissive optical element is a keypad key face, through which a light emitting device emits light, the method further comprising forming a keypad key wall that is attached to the keypad key face. See figs. 5, 9 and col. 5, line 59 to col. 6, line 61; col. 7, line 45 to col. 10, line 67.

11. Claim(s) 9 and 12-19 are rejected under 35 U. S. C. § 102 (e) as being anticipated by U.S. Patent No. 6,521,915 to Odaki et al.

Regarding claim 9, Odaki discloses a transmissive optical element, as shown in figs. 1-6, comprising:

a shell 4 (fig. 3) that comprises a transparent plastic including a phosphor dispersed therein. See col. 5, line 42 to col. 6, line 28; col. 6, line 64 to col. 7, line 54.

Regarding claim 12, Odaki discloses the transmissive optical element wherein the shell is a dome-shaped shell, the transmissive optical element further comprising a transparent inner core 20/20' inside the dome-shaped shell. See figs. 3, 5.

Regarding claims 13-14, Odaki discloses the transmissive optical element wherein the shell is a dome-shaped shell, the transmissive optical element further comprising a transparent outer core outside the dome-shaped shell. See col. 7, lines 24-54.

Regarding claim 15, Odaki discloses the transmissive optical element wherein the transparent inner core fills the dome-shaped shell. See figs. 3, 5.

Regarding claim 16, Odaki discloses the transmissive optical element in combination with a semiconductor light emitting device (1/3/8) that is configured to emit

light into and through the transparent inner core 20 and through the dome-shaped shell, to emerge from the dome-shaped shell. See figs. 3, 5.

Regarding claim 17, Odaki discloses the transmissive optical element in further combination with a mounting substrate 10 that is adjacent the semiconductor light emitting device such that the semiconductor light emitting device is between the mounting substrate and the transparent inner core. See figs. 2, 3, 5.

Regarding claim 18, Odaki discloses the transmissive optical element comprising all claimed limitations. See figs. 2-5 and col. 5, line 42 to col. 8, line 64, and col. 12, lines 61-67.

Regarding claim 19, Odaki discloses the transmissive optical element wherein the shell is a keypad key shell, including a keypad key face (upper surface) and a keypad key wall (side wall) that extends from the keypad key face. See figs. 1B, 2B, and 4.

12. Claim(s) 9-22 is/are rejected under 35 U. S. C. § 102 (e) as being anticipated by U.S. Patent No. 6,576,930 to Reeh et al.

Regarding claim 9, Reeh discloses a transmissive optical element, as shown in figs. 1-5, comprising: a shell 4 that comprises a transparent plastic including a phosphor

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6 dispersed therein. See col. 7, lines 47-64; col. 11, lines 51-59; col. 13, lines 15-46; and figs. 4-5.

Regarding claims 10-22, Reeh discloses the transmissive optical element comprising all claimed limitations. See figs. 1-5, and col. 11, line 51 to col. 14, line 50.

Claim Rejections - 35 U.S.C. § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim(s) 4-5 is/are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,734,465 to Taskar et al., in view of Odaki et al., U.S. Patent No 6,521,915.

Regarding claims 4-5, Taskar discloses the method comprising all claimed limitations, except for forming a transparent outer shell outside the dome.

However, Odaki discloses the transmissive optical element, as shown in figs. 1-6, comprising forming a transparent outer core outside the dome-shaped shell. See col. 7, lines 24-54.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Taskar so that it further includes a transparent outer core outside the dome-shaped shell as that of Odaki in order to enable luminance to be increased and illumination action to be efficiently performed with a small amount of energy (see col. 7, lines 47-54 of Odaki).

15. Claim(s) 10-11 and 20-22 is/are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,521,915 to Odaki et al., in view of the following remarks.

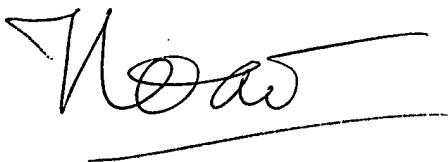
Regarding claims 10-11, and 20-22, Odaki discloses the transmissive optical element comprising all claimed limitations, except for explicitly describe that whether the phosphor is uniformly or non-uniformly dispersed. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the phosphor of Odaki should be formed either uniformly or nonuniformly, depending on the desired output light (See further U.S. Patent No. 6,717,355 to Takahashi et al., col. 5, lines 49-65, and col. 9, lines 41-50).

Conclusion

16. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao H. Nguyen whose telephone number is (571)272-1791. The examiner can normally be reached on Monday-Friday, 9:00 AM – 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax numbers for all communication(s) is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1625.

A handwritten signature in black ink, appearing to read 'Dao H. Nguyen', with a horizontal line underneath.

Dao H. Nguyen
Art Unit 2818
March 18, 2005

A handwritten signature in black ink, appearing to read 'David Nelms', with a horizontal line underneath.

David Nelms
Supervisory Patent Examiner
Technology Center 2800